

## ELECTROCHEMICAL MACHINING METHOD, TOOL ASSEMBLY, AND MONITORING METHOD

### ABSTRACT OF THE DISCLOSURE

**[0036]** In an electrochemical machining tool assembly having at least one electrode arranged across a gap from a workpiece, the electrode being energized by application of a potential difference  $\Delta V$  between the electrode and the workpiece, a method of monitoring machining includes exciting at least one ultrasonic sensor to direct an ultrasonic wave toward a surface of the electrode and receiving a reflected ultrasonic wave from the surface of the electrode using the ultrasonic sensor. The reflected ultrasonic wave includes a number of reflected waves from the surface of the electrode and from a surface of the workpiece. The method further includes delaying the excitation of the ultrasonic sensor a dwell time  $T_d$  after a reduction of the potential difference  $\Delta V$  across the electrode and the workpiece occurs.